

REMARKS

Claims 1, 3, 5, 6, 8-17 and 19 were pending, with claims 6 and 8-15 withdrawn. Claims 1 and 16 are amended, claim 5 canceled, and claims 21 and 22 added. The amended and new claims are supported in the Applicants' specification (see, e.g., U.S. 2008/0057260 A1, ¶¶[0016], [0018], [0019], [0028], and original claim 5). No new matter has been added. Claims 1, 3, 16, 17, 19, 21 and 22 are presented for examination in view of the amendments and these remarks.

Claims 1, 3 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pub. No. 2003/0143423 ("McCormick") alone or further in view of U.S. Pat. No. 6,710,542 ("Chun"). However, McCormick and Chun, alone or in any proper combination, have not been shown to have described or made obvious "[a]n encapsulation for an organic electronic component arranged on a substrate, wherein . . . a protective film covers [a] component at least in an area of transition from [a] capsule to the substrate . . . wherein said protective film includes a film made of silicon nitride," as recited in amended claim 1, from which claim 3 depends. As indicated above, claim 5 is canceled.

McCormick described "the use of adsorbent (desiccant and/or getter) loaded transfer adhesives to adhere an encapsulation lid to an organic electronic device (OED) as part of an encapsulation method."¹ A device 10 "is comprised of substrate 12 on which are located cathode pad 14 and anode pad 16."² "Desiccant-loaded transfer adhesive 22 forms a gasket around the OED structure covering its periphery, and is topped with encapsulation lid 24. Optional high barrier adhesive 26 encompasses transfer adhesive 22 and extends from substrate 12 to encapsulation lid 24."³ The Office action acknowledges that McCormick did not describe the use of a silicon nitride protective film.⁴

Chun described an electroluminescent layer in electrical contact with first and second electrodes in electrical contact with the electroluminescent layer.⁵ To the extent Chun described

¹ McCormick, ¶[0004].

² *Id.*, ¶[0027].

³ *Id.*

⁴ See, e.g., Office Action of March 28, 2011, p. 3.

⁵ See, e.g., Chun, 2:9-12.

a seal having a layer of epoxy and a layer of “silicon nitride” for preventing water and oxygen from reaching the second electrode, Chun appears to define “silicon nitride” as SiNH:

The present invention is an electroluminescent device and method for making the same. The electroluminescent device includes a substrate that is impermeable to water and oxygen having a first electrode thereon. An electroluminescent layer is in electrical contact with the first electrode, and a second electrode is in electrical contact with the electroluminescent layer. A seal having a layer of epoxy and a layer of silicon nitride prevents water and oxygen from reading the second electrode. The epoxy preferably has a cure temperature less than 140° C. Similarly, the SiNH layer is preferably deposited at a temperature below 140° C. The layer of SiNH preferably has an etch rate of less than 50 Å/sec in 10% HF solution.⁶

Moreover, Chun described embodiments as follows: “[t]he above-described embodiments of the present invention utilize a sealing layer in which the epoxy and SiNH sealing layer encapsulates the cathode.”⁷ In a final embodiment, Chun described a sealing layer 51 “constructed from one or more bi-layers consisting of a layer of SiNH 52 deposited on a layer of epoxy 53 . . . ”⁸

However, in the Applicants’ claim 1, “silicon nitride” refers to Si_3N_4 . This is the common definition of the term and is the definition that would have been understood by a person of ordinary skill in the art. For example, Wikipedia defines silicon nitride as follows: “Silicon nitride (Si_3N_4) is a chemical compound of silicon and nitrogen.”⁹

Accordingly, in view of the definition used by Chun, the Applicants’ respectfully submit that a person of ordinary skill in the art would have understood Chun to have described a layer of SiNH and would not have understood Chun to have described a film made of silicon nitride (Si_3N_4), as recited in the Applicants’ claim 1. For at least this reason, the Applicants respectfully submit that Chun did not cure the deficiencies of McCormick described above. Moreover, the Applicants respectfully submit that Chun described only SiNH and, therefore, a person of ordinary skill in the art would not have sought to modify Chun’s thin layer to include silicon nitride (Si_3N_4) as recited in amended claim 1. Thus, McCormick and Chun, alone or in any proper combination, have not been shown to have described or made obvious each and every feature of amended claim 1 and, therefore, do not form the basis of a *prima facie* case of obviousness of amended claim 1, from which claim 3 depends.

⁶ *Id.*, 2:6-18 (emphasis added).

⁷ *Id.*, 4:22-24 (emphasis added).

⁸ *Id.*, 4:40-42 (emphasis added).

⁹ Wikipedia – Silicon nitride, http://en.wikipedia.org/wiki/Silicon_nitride, last visited September 27, 2011.

Claims 16, 17 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat No. 7,642,642 ("Fazzio") in view of Chun for the reasons of record. However, Fazzio and Chun, alone or in any proper combination, have not been shown to have described or made obvious an encapsulation for an organic electronic component arranged on a substrate "wherein [a] thin-barrier-film includes organic layers comprising inorganic materials chosen from metal oxides, metal nitrides, metal oxynitrides," as recited in claim 16, as amended.

Fazzio described an apparatus 40 including a device chip 20 including substrate 22.¹⁰ "A cap 30, including gasket 32, is bonded to the device chip 20 and the cap 30 define a hermetically sealed cavity 26."¹¹ "Depending on the desired application, the gasket 32 can have thickness 37 in the order of microns or tens of microns and have a length 39 in the order of microns or tens of microns."¹² "The gasket 32 is attached to the substrate 22 using bonding agent 34 such as gold."¹³ "[I]n addition to the bonding agent 34, caulking agent 36 is used to seal the cavity 26."¹⁴ In the cited embodiment, shown in FIG. 3A, "the caulking agent 36 caulk and envelopes portions of or all of the bonding agent 34 and the gasket 32 which is a part of the cap 30."¹⁵ "Various materials can be used as the caulking agent 36, for example, amorphous fluorocarbon polymer such as Cytop®, polyimide materials, and benzocyclobutene (BCB) based materials."¹⁶ Fazzio did not describe or make obvious a thin-barrier-film including inorganic materials, much less metal oxides, metal nitrides, metal oxynitrides, as recited in claim 16, as amended.

Chun was cited as having described that "either just the area of transition between the cap and the substrate may be covered with barrier material or the transition area plus the entire top of the product may be covered by spin coating . . ."¹⁷ However, even if a person of ordinary skill in the art would have understood Chun to have described such a barrier material or spin coating, which the Applicants do not concede, Chun did not describe or make obvious metal oxides or metal oxynitrides. Moreover, Chun did not describe or make obvious any metal nitrides for at

¹⁰ See, e.g. Fazzio, 2:56-58.

¹¹ *Id.*, 2:62-66.

¹² *Id.*, 3:4-7.

¹³ *Id.*, 3:10-11 (emphasis added).

¹⁴ *Id.*, 3:19-20.

¹⁵ *Id.*, 3:43-45.

¹⁶ *Id.*, 3:25-28.

¹⁷ Office Action of March 28, 2011, p. 4.

least the reasons discussed above with respect to claim 1. For at least these reasons, Chun has not been shown to have cured the deficiencies of Fazzio discussed above. Accordingly, Fazzio and Chun, alone or in any proper combination, have not been shown to have described or made obvious each and every feature of amended claim 16 and, thus, do not form the basis of a *prima facie* case of obviousness of amended claim 16, from which claims 17 and 19 depend.

CONCLUSION

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable. Canceled claims, if any, have been canceled without prejudice or disclaimer. Any circumstance in which the Applicants have (a) addressed certain comments of the Examiner does not mean that the Applicants concede other comments of the Examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the Applicants concede any of the Examiner's positions with respect to that claim or other claims.

Filed herewith is a Petition for Extension of Time. All fees are being paid concurrently herewith on the Electronic Filing System by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 12406-0225US1.

Respectfully submitted,

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